own. The government of Greece has shown such warm interest in our enterprise, that a valuable piece of land on the slope of Mount Lycabettus, containing an acre and a half, has been granted to the school by a royal edict, issued July 25, 1886, and signed by seven ministers of state."

This generosity of the Greek government has already been so well seconded by friends of the school in America, that sufficient funds are already in hand to erect and furnish a suitable home for the school, which will be ready for occupation in October. To place the enterprise in a position to attain the greatest possible usefulness, an endowment of at least a hundred thousand dollars ought to be secured. Plenty of work lies before the school. Prof. Martin L. D'Ooge of the University of Michigan, the director for 1886–87, writes that the French government is not likely to accept the offer, made by the Greek authorities, of the privilege of making excavations at Delphi, and in that event the chance will be offered to the Americans.

We may fitly end this brief account of the American school at Athens with the glowing words of Professor Goodwin himself upon this very subject: "The Archeological society of Athens has disclosed a wealth of ancient temples near Epidaurus, — among others, the beautiful round building erected by Polycletus, and the theatre, also his work; and the same society has opened to the day the foundations and the pavement of the great sanctuary of Eleusis, the home of the Eleusinian mysteries, which offers more problems to architects and archeologists than will soon be answered. Every part of Greece is full of plans for new excavations, which merely need money to be carried out with substantial results. The ruins of Delphi, with their countless buried temples, which peer imploringly from the scanty earth, as if beseeching the traveller to restore them to the light of the sun, lie at this moment waiting only for some power to decide who shall excavate them; and happy will be the scholars who are fortunate enough to be in Greece when the solemn silence of that wonderful valley of Delphi is first broken by the pickaxe and the spade."

JOHN S. WHITE.

LONDON LETTER.

THAT the people of England are at last beginning to realize the immense importance of technical education is evident from two facts, — first, that scarcely a week passes without prominence being given by the press to utterances on the subject by public men; and, second, that pressure is being put on the government to extend such instruction. A few days ago Lord Hartington distributed the prizes at the Polytechnic young men's Christian institute, an organization in the west of London which numbers seven thousand students in technical subjects; and his speech, in which he quoted Professor Huxley, was widely circulated and favorably commented upon. During the present week a very influential deputation was received at the education department, which strongly urged the provision of manual training in all elementary schools, as a preparation for technical instruction later. It was pointed out that a very slight modification of existing organizations would enable this to be done at a small expense. The reply of the government, though sympathetic, was to the effect that parliament had not yet pronounced an opinion on the subject.

On the evening of March 16 a very well arranged and largely attended *conversazione* was held at the Central institution of the city and guilds of London, for the advancement of technical education. Demonstrations were given during the evening by members of the staff, notably by Professor Unwin, F.R.S., with the 100-ton testing-machine. The apparatus and methods of instruction employed were on view in the different laboratories, and interesting exhibits, lent for the occasion, were also displayed. Two concerts added to the enjoyment of the fifteen hundred guests; but it was rather unkind to allot, as a ladies' cloakroom, a room on the door of which was inscribed, 'Chemical preparation room.'

Lecturing a few nights ago to a crowded audience at the Royal institution, on 'Mental differences in men and women,' Dr. Romanes remarked that the average woman's brain weighed five ounces less than the average man's, and that the inferiority of women displayed itself in the absence of originality in the higher levels of intellectual work. In powers of acquisition, women stood nearer to men, and indeed often surpassed them at an early age.

On Tuesday, March 15, a most unusual meteorological state of things prevailed in London, which was at the time under the influence of the calm weather between two systems of depression. Snow fell to the depth of a foot or more, — and it did not disappear for more than a week, — and simultaneously a high fog occurred, literally causing midnight at noon and for some hours after, although the lower strata of air were fairly clear, and devoid of mist. In consequence of the unexpected sudden consumption of gas, the supply thereof ran short, and in many places grave inconvenience and danger resulted.

M. Hermite's process of the electrolytic bleach-

ing of cotton cloth, etc., is attracting a great deal of attention from both the scientific and the practical side. A very favorable opinion was lately expressed upon it at the Society of chemical industry. The process consists essentially in electrolyzing a solution of magnesium chloride, thus liberating the active agent of chlorinated lime; and, as it is easy to maintain the solution at constant strength, it is found that the consumption of chlorine is only one-half that on the ordinary system. The fundamental industrial equation of economy shows that the mechanical work represented by 570-horse power spent upon a dynamo-machine will produce the equivalent of ten hundredweight of bleaching-powder ('chloride of lime') per hour, or a 50-horse-power engine would give one ton per day of twenty-four hours.

Since Mr. Castner's paper upon his process for manufacturing sodium and potassium was read at the Franklin institute of Philadelphia (Oct. 12, 1886), several changes have been made in the method of manufacture. These were recently brought before the London section of the Society of chemical industry by Mr. James Maclear. With caustic soda at eleven pounds per ton, the sodium produced costs less than twenty-five cents per pound, the cost of materials and fuel being only seventeen cents. The steel crucibles employed have been used fifty, and probably can be used a hundred and fifty or two hundred times: hence the 'tear and wear' on them amounts to not more than two cents per pound of sodium. Cheap sodium, it need scarcely be mentioned, means cheap aluminium (by Deville's process), which, with sodium at the above price, can probably be produced at four dollars per pound, or one-fourth its present value.

The conditions affecting the distribution of micro-organisms in the atmosphere were the subject of a paper at the Society of arts three nights ago, by Dr. Percy F. Frankland, son of the distinguished chemist. The method of observation was Hesse's, in which a given volume — usually ten litres — of air is slowly drawn through short wide tubes coated internally with a solid layer of sterile gelatine-peptone. The maximum number in the same place observed through the year, occurred early in August. Elevation above ground, and distance from human habitations, decreased the number. In sea-air, for example, at one hundred and twenty miles from land, there was only one organism to ninety-three litres. In considering his paper, the author expressed a decided opinion that it was the chemical side of bacteriology which imperatively demanded attention at present. The chairman, Prof. Burdon Sanderson, adjourned the discussion for a week, when it will be opened by Dr. Alfred Carpenter.

The government, which was recently approached on the subject, has just agreed to make an annual allowance of eight thousand dollars per year to the youngest of English universities, the Victoria, whose headquarters are at Owens college, Manchester. The success of this application will encourage the promoters of government aid to the university colleges throughout the country, now languishing for want of funds.

The Institution of naval architects, and the scientific ship-building industry generally, have just sustained a severe loss by the death of Mr. William Denny of Dumbarton. Throughout his too brief career, the influence upon him of Mr. William Froude, F.R.S., was very marked. The scientific department which he established in his own yard at Dumbarton, on the Clyde, was the first of its kind in a private ship-building yard, and the façade of its great experimental tank (300 feet by 22 feet, with 9 feet of water) was erected to Mr. Froude's memory. Mr. Denny was the first to use mild steel for the construction of transatlantic steamers, in 1879. His most famous paper probably was that on the difficulties of speed calculation, in 1874–75, and his last was in 1884, on 'Cross-curves of stability.' In 1882 he delivered the 'Watt anniversary lecture' at Greenock, on 'The speed and carrying of screw steamers.' W.

London, March 26.

GEOGRAPHICAL NOTES.

Asia.

The latest letters of the enterprising Frenchmen MM. Capus and Bonvalot, who are trying to reach India from Samarkand, are of considerable interest. The latest are dated Jan. 13 and Feb. 23, 1887. They started from Samarkand for Bokhara on Sept. 13. Near Samarkand they traversed the extensive plantations of General Korolkof, who has, by irrigation, brought under cultivation an extensive area of barren country on both sides of the Kara Tepe. Over the difficult passes of Takhta-Karacha and Lahore Murda the travellers reached the valley of the Sangardak. All this district is inhabited by the Uzbegs and Tajiks. After a few days they reached the plain of Hissar. This district produces rice in great quantities and of exceptionally good quality. The town is very unhealthy, and in summer the whole population moves to Karatagh. The travellers then descended the unexplored valley of the Kafirnahan to its confluence with the Amu-Darya. In this valley,